

CLAIMS

What is claimed is:

1. An endotracheal tube holder for neo-natal use, said endotracheal tube holder comprising:

an arcuate face plate which is disposed adjacent to and in front of a patient's mouth, wherein the face plate includes a receptacle disposed so as to be relatively centered in front of the mouth, and wherein the face plate has a first attaching arm and a second attaching arm which are contiguous with a patient's cheeks as they extend from either side of the face plate towards a back of a patient's head;

an endotracheal tube holder member disposed in the front of the arcuate face plate, and which is configured for positioning an endotracheal tube away from a patient's palate;

a bite block disposed so as to be held by the endotracheal tube holder member, and which extends inwards into the patient's mouth, wherein the bite block is surrounded by a rubber sleeve so as to cushion gums and teeth as they are pressed against the bite block; and

a plurality of non-elastic attachment straps which are coupled to the first and the second attaching arms of

the face plate, and which extend around the neo-natal patient's head so as to secure the face plate in front of the patient's mouth.

2. The endotracheal tube holder as defined in claim 1 wherein the endotracheal tube holder member further comprises:

a bottom member generally formed as half a cylinder cut lengthwise, which includes a first semicircular depression along a long axis for receiving the endotracheal tube; and

a top member generally formed as half a cylinder cut lengthwise, which includes a second semicircular depression for receiving the endotracheal tube, wherein the bottom member is coupled to the top member along a pivoting edge which is parallel to the lengthwise axis, such that the bottom member and the top member form a cylinder with a hole formed from the first and the second semicircular depressions through the center thereof.

3. The endotracheal tube holder as defined in claim 2 wherein the endotracheal tube holder member further comprises a bore hole through the top member so as to be

parallel to the lengthwise axis, such that a second tube can be inserted through the bore hole, to thereby introduce fluids into the patient at the same time that the endotracheal tube is being utilized.

4. The endotracheal tube holder as defined in claim 2 wherein the endotracheal tube holder member further comprises a bore hole through the bottom member so as to be parallel to the lengthwise axis, such that a second tube can be inserted through the bore hole, to thereby introduce fluids into the patient at the same time that the endotracheal tube is being utilized.

5. The endotracheal tube holder as defined in claim 2 wherein the endotracheal tube holder member further comprises the bite block which is formed from the top member and the bottom member, and which extends inwards into the patient's mouth.

6. The endotracheal tube holder as defined in claim 2 wherein the endotracheal tube holder member further comprises:

the top member having a ratcheting hook; and

the bottom member having a plurality of complementary receiving indentations against which the ratcheting hook is able to grip, thereby enabling the top member and the bottom member to hold endotracheal tubes of varying diameters within the first and the second semicircular depressions in accordance with how far the ratcheting hook is pressed into the receiving indentations.

7. The endotracheal tube holder as defined in claim 1 wherein the endotracheal tube holder member further comprises:

a first cheek pad disposed between the first attaching arm and the patient's cheek; and
a second cheek pad disposed between the second attaching arm and the patient's cheek, to thereby cushion the patient's cheek from the first and the second attaching arms.

8. The endotracheal tube holder as defined in claim 1 wherein the plurality of non-elastic attachment straps are coupled to the first and the second attaching arms using using a hook and loop fastening system such as VELCRO™, to thereby enable easy and rapid adjustments thereof.

9. The endotracheal tube holder as defined in claim 8 wherein the plurality of non-elastic attachment straps further comprises:

a first strap which is coupled to the first and the second attaching arms, and which extends around a base of a neck of the patient;

a second strap which is coupled to the first attaching arm, extends upwards in a curve along the patient's cheek to a patient's forehead, and then back down the patient's other cheek where it is coupled to the second attaching arm;

a third and a fourth strap which are coupled to the first strap at the base of the neck, and which extend forwards over the head so as to be coupled to the second strap at approximately the patient's forehead; and

a fifth strap which is coupled to the second strap generally above the patient's eyes and in a generally horizontal position.

10. The endotracheal tube holder as defined in claim 9 wherein the plurality of non-elastic attachment straps further comprises:

a first strap which is coupled to the first and the second attaching arms, and which extends around a base of a neck of the patient;

a second strap which is coupled to the first attaching arm, extends upwards in a curve along the patient's cheek to a patient's forehead, and then back down the patient's other cheek where it is coupled to the second attaching arm;

a third and a fourth strap which are coupled to the first strap at the base of the neck, and which extend forwards over the head so as to be coupled to the second strap at approximately the patient's forehead; and

an eye covering which is disposed across the patient's eyes, and which has the second strap threaded through the eye covering on either side of the patient's eyes.

11. The endotracheal tube holder as defined in claim 9 wherein the plurality of non-elastic attachment straps further comprises:

a first strap which is coupled to the first and the second attaching arms, and which extends around a base of a neck of the patient;

a second strap which is coupled to the first attaching arm, extends upwards in a curve along the patient's cheek to a patient's forehead, and then back down the patient's other cheek where it is coupled to the second attaching arm;

a third and a fourth strap which are coupled to the first strap at the base of the neck, and which extend forwards over the head so as to be coupled to the second strap at approximately the patient's forehead; and

a fifth strap which is coupled to the third and fourth straps in a horizontal position at a back of the patient's head and approximately opposite the patient's eyes.

12. The endotracheal tube holder as defined in claim 1 wherein the face plate is constructed of a clear polycarbonate material to thereby assist in visual inspection of the patient.

13. A method for providing an endotracheal tube holder for neo-natal use to thereby avoid damaging tissues and bones of the neo-natal patient, said method comprising the steps of:

(1) providing the endotracheal tube holder including an arcuate face plate, a receptacle centered thereon, a first attaching arm and a second attaching arm, a tube holder member which is configured for holding an endotracheal tube and disposed within the receptacle, a plurality of attachment straps which are coupled to the first and the second attaching arms of the face plate, and which extend around the neo-natal patient's head so as to secure the face plate in front of the patient's mouth;

(2) centering the tube holder member in front of the patient's mouth;

(3) providing a bite block as part of the tube holder member which extends inwards into the patient's mouth, wherein the bite block is surrounded by a rubber sleeve which functions so as to cushion the gums and teeth as they are pressed against the bite block, and wherein an endotracheal tube passes through the tube holder member so as not to make contact with the patient's gums or teeth; and

(4) constructing the plurality of attachment straps using a non-elastic material to thereby avoid creating pressure on the neo-natal patient's cranial structure.

14. The method as defined in claim 13 wherein the method further comprises the step of:

(1) forming a bottom member as half a cylinder cut lengthwise, which includes a semicircular depression along a long axis for receiving the endotracheal tube; and

(2) forming a top member generally as half a cylinder cut lengthwise, which includes a semicircular depression for receiving the endotracheal tube, wherein the bottom member is coupled to the top member along a pivoting edge which is parallel to the lengthwise axis, such that the bottom member and the top member form a cylinder with a hole formed from the semicircular depressions through the center thereof; and

(3) boring a hole parallel to the lengthwise axis through the top member to thereby enable a second tube to be inserted into the patient's mouth at the same time as an endotracheal tube.

15. The method as defined in claim 14 wherein the method further comprises the step of providing a bite block which extends into the patient's mouth from the top member and the bottom member, to thereby prevent damage to a patient's teeth, gums and palate.

16. The method as defined in claim 14 wherein the method further comprises the steps of:

(1) providing a ratcheting hook on the top member;

and

(2) providing a plurality of complementary receiving indentations against which the ratcheting hook is able to grip, thereby enabling the top member and the bottom member to hold endotracheal tubes of varying diameters within the semicircular depressions in accordance with how far the ratcheting hook is pressed into the receiving indentations.

17. The method as defined in claim 16 wherein the method

further comprises the steps of:

(1) providing a first cheek pad disposed between the first attaching arm and the patient's cheek; and

(2) providing a second cheek pad disposed between the second attaching arm and the patient's cheek, to thereby cushion the patient's cheek from the first and the second attaching arms.

18. The method as defined in claim 10 wherein the method further comprises the step of providing The hook and loop fastening system of a hook and loop fastening system such as VELCRO(TM) on the plurality of attachment straps to thereby enable quick and easy adjustments to the endotracheal tube holder.

19. The method as defined in claim 12 wherein the method further comprises the step of constructing the endotracheal tube holder of a clear polycarbonate material to thereby assist in visual inspection of the patient.

20. A method for protecting gums, teeth and palate of a neo-natal patient when using an endotracheal tube holder, said method comprising the steps of:

(1) providing the endotracheal tube holder including an arcuate face plate, a receptacle centered thereon, a first attaching arm and a second attaching arm, an endotracheal tube holder member which is configured for holding an endotracheal tube and disposed within the receptacle, a plurality of attachment straps which are coupled to the first and the second attaching arms of the face plate, and which extend around the neo-natal patient's head so as to secure the face plate in front of the patient's mouth; and

(2) disposing a cushioned bite block on the tube holder member, enabling the bite block to extend into the patient's mouth and provide a surface for the gums and teeth to rest without causing damage thereto, wherein the endotracheal tube passes through the cushioned bite block so as not to touch the gums and teeth, and wherein the cushioned bite block centers the endotracheal tube in the neo-natal patient's mouth to thereby prevent injury to a palate therein.